



Construction bidding activities in the context of digital transformation: Advantages, challenges, causes, and solutions

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Abstract

This study investigates construction bidding activities in Vietnam in the context of digital transformation, focusing on advantages, challenges, underlying causes, and policy implications. The research applies a qualitative approach, combining doctrinal legal analysis with document review of policy reports and empirical studies related to procurement practices. Key legal instruments, including the Law on Bidding and its recent amendments, are examined alongside practical evidence from official reports and sector-specific analyses. The findings indicate that digital transformation has improved transparency, enhanced access to bidding information, and reduced administrative costs through the implementation of the national e-procurement system. These changes have contributed to strengthening competition and promoting more efficient use of public resources. However, the study also identifies persistent challenges, including inconsistencies in legal implementation, technological disparities, and limitations in institutional capacity. Governance risks, such as non-compliance and procedural irregularities, continue to exist despite the expansion of digital platforms. The analysis shows that these issues arise from the interaction of legal, institutional, and technological factors. The study concludes that improving construction bidding requires a coordinated approach that integrates regulatory coherence, capacity building, and digital infrastructure, thereby contributing to more effective and accountable procurement systems in transitional economies.

Keywords: Construction bidding, digital transformation, e-procurement, public procurement efficiency, Vietnam

Introduction

Construction bidding is a core instrument through which public resources are allocated and infrastructure projects are delivered. Its performance is closely associated with the efficiency of public spending, the quality of construction outputs, and the credibility of state governance. In Vietnam, the legal foundation for bidding has been progressively refined, beginning with the Law on Bidding 2013^[9] and continuing through subsequent revisions, including the Law on Bidding 2023^[11] and recent amendments that align procurement practices with evolving economic and institutional requirements (National Assembly, 2013; National Assembly, 2023; National Assembly, 2025)^[9, 11, 13]. Supporting regulations, such as Decree No. 53/2014/ND-CP and Decree No. 214/2025^[2, 4]/ND-CP, have further clarified procedures for contractor selection and strengthened regulatory oversight (Government, 2014; Government, 2025)^[2, 4]. These developments reflect sustained efforts to improve transparency, competitiveness, and accountability in public procurement.

Alongside legal reform, digital transformation has become a defining trend in the modernization of bidding activities. The adoption of electronic procurement systems has gradually replaced conventional, paper-based procedures, enabling broader participation, reducing transaction costs, and enhancing the accessibility of bidding information. Evidence from national reports indicates that the implementation of the e-procurement system has contributed to standardizing processes and increasing the openness of procurement activities (Ministry of Planning and Investment, 2021). During the COVID-19 pandemic, digital platforms proved particularly valuable in maintaining procurement continuity under conditions of restricted mobility, thereby reinforcing the strategic importance of digital transformation in public investment management (Tran Thi Ninh, 2021)^[17].

Despite these advancements, the practice of construction bidding in Vietnam continues to reveal structural and operational limitations. Existing studies have noted that regulatory inconsistencies, overlapping legal provisions, and uneven enforcement remain significant barriers to effective implementation (Nguyen Thi Nhu Nguyet, 2022)^[16]. The transition to online bidding has also introduced new challenges, including technical constraints, data management issues, and legal uncertainties regarding electronic transactions (Dinh Hoa, 2018)^[1]. In addition, several high-profile cases involving bidding violations, particularly in sectors such as healthcare and education, have highlighted persistent risks related to transparency and compliance (News Department, 2021)^[14]. These issues suggest that digitalization alone cannot resolve systemic weaknesses without corresponding improvements in institutional capacity and governance practices.

From a sector-specific perspective, construction projects are characterized by high capital intensity, technical complexity, and extended implementation timelines. Inefficiencies in the bidding stage may therefore generate significant downstream consequences, including cost overruns, project delays, and reduced construction quality. Research indicates that the effectiveness of bidding activities depends on multiple interacting factors, such as the clarity of legal regulations, the coordination among stakeholders, the level of technological readiness, and the professional competence of procurement entities (Vu Hong Hai, 2023; Hoang Thanh Long, 2026)^[5]. At the same time, persistent shortcomings in the bidding system, such as procedural rigidity and limited integration between policy and practice, continue to constrain performance (Xuan Hoang, Dinh Loi, & Anh Dung, 2022).

In response to these challenges, recent policy initiatives have emphasized the need to strengthen the digital infrastructure of procurement systems while improving

regulatory coherence and accountability mechanisms. Circular No. 79/2025^[7]/TT-BTC, for example, introduces standardized requirements for the publication of bidding information and the use of electronic bidding documents, thereby promoting greater transparency and consistency (Ministry of Finance, 2025)^[7]. Complementary reforms in related areas, including public asset management and project governance, further underscore the interconnected nature of procurement efficiency and broader institutional performance (National Assembly, 2017; Kim Yen, 2024)^[10, 12]. Local reform efforts, such as those implemented in Ho Chi Minh City, also demonstrate a growing commitment to enhancing bidding effectiveness through administrative innovation and digital solutions (Ngoc Tuan, 2026)^[15]. Against this backdrop, the study titled “Construction Bidding Activities in the Context of Digital Transformation: Advantages, Challenges, Causes, and Solutions” seeks to provide a comprehensive examination of construction bidding practices in Vietnam. Specifically, the study aims to (i) identify the advantages associated with the application of digital technologies in bidding processes; (ii) analyze the key challenges and limitations encountered in practice; (iii) clarify the underlying causes from legal, institutional, and technological perspectives; and (iv) propose practical solutions to improve the efficiency, transparency, and integrity of construction bidding in the digital era. By situating construction bidding within the broader context of digital governance and public sector reform, this study contributes to a more nuanced understanding of procurement modernization in transitional economies. It is expected to offer both analytical insights and policy-relevant recommendations for enhancing the effectiveness of bidding systems in Vietnam and comparable contexts.

Literature Review

1. Evaluation of existing studies related to construction bidding in the context of digital transformation

The body of research on bidding activities in Vietnam has developed along three principal lines: (i) the role of bidding in public finance and investment efficiency; (ii) institutional and legal frameworks governing procurement; and (iii) emerging issues associated with the digitalization of bidding processes. While these strands provide valuable insights, their integration remains limited, particularly in the construction sector.

From a public finance perspective, bidding is consistently recognized as a critical mechanism for enhancing the efficiency of state expenditure. Vo Hoang Quan (2014)^[18] emphasizes that competitive bidding contributes to cost control, resource optimization, and transparency in public spending. This perspective is reinforced by policy-oriented studies highlighting the role of procurement systems in safeguarding fiscal discipline and preventing waste in investment projects. In the context of infrastructure development, the effectiveness of bidding processes is closely tied to the quality and timeliness of project implementation, which in turn affects broader socio-economic outcomes.

A second stream of research focuses on the institutional and legal dimensions of bidding. The evolution of Vietnam’s legal framework—from the Law on Bidding 2013 to subsequent amendments in 2023 and 2025^[9, 11, 13]—has been examined as an ongoing effort to align procurement practices with international standards and domestic governance requirements (National Assembly, 2013; National Assembly, 2023; National Assembly, 2025)^{[9, 11,}

13]. Studies indicate that these reforms have contributed to greater procedural clarity and expanded regulatory coverage. However, empirical analyses reveal persistent inconsistencies in implementation, including overlapping regulations and gaps between formal rules and actual practice (Nguyen Thi Nhu Nguyet, 2022)^[16]. Xuan Hoang, Dinh Loi, and Anh Dung (2022)^[16] further identify systemic shortcomings such as fragmented policy execution, procedural rigidity, and limited accountability mechanisms, which continue to hinder the effectiveness of bidding activities.

The third and more recent line of inquiry examines the impact of digital transformation on procurement systems. The introduction of online bidding has been widely regarded as a significant step toward modernizing public procurement. Dinh Hoa (2018)^[11] provides an early assessment of e-procurement in Vietnam, noting that while digital platforms enhance transparency and reduce direct human interaction, they also generate new legal challenges related to electronic transactions, data validity, and dispute resolution. Subsequent reports confirm that the national e-procurement system has improved information accessibility and standardized bidding procedures (Ministry of Planning and Investment, 2021). In the context of the COVID-19 pandemic, digital tools have played a crucial role in maintaining procurement continuity, thereby accelerating the adoption of online bidding practices (Tran Thi Ninh, 2021)^[17].

At the sectoral level, several studies have examined factors influencing the effectiveness of bidding activities. Vu Hong Hai (2023)^[11] highlights the importance of organizational capacity, coordination mechanisms, and compliance with regulatory procedures in improving bidding outcomes within large state-owned enterprises. Similarly, Hoang Thanh Long (2026)^[5] identifies key determinants of procurement performance, including institutional conditions, technical expertise, and the transparency of evaluation criteria. Although these studies are not limited to construction, their findings are directly applicable to construction bidding, given the shared characteristics of large-scale investment projects.

In addition, research has drawn attention to governance risks and integrity challenges in bidding processes. Reports of violations and irregularities, particularly in sectors such as healthcare procurement, underscore ongoing concerns regarding compliance and oversight (News Department, 2021)^[14]. These issues suggest that improvements in legal frameworks and digital systems have not yet fully addressed underlying institutional weaknesses. Furthermore, broader analyses of construction project management indicate that inefficiencies in procurement are closely linked to deficiencies in project planning, supervision, and coordination (Kim Yen, 2024)^[6].

Recent policy developments have sought to address these challenges by strengthening regulatory coherence and promoting digital standardization. Instruments such as Decree No. 214/2025/ND-CP and Circular No. 79/2025^[4, 7]/TT-BTC emphasize the integration of digital procedures into procurement processes and the enhancement of transparency through standardized information disclosure (Government, 2025; Ministry of Finance, 2025)^[4, 7]. Local initiatives, such as reform efforts in Ho Chi Minh City, further illustrate attempts to improve bidding performance through administrative innovation and digital governance (Ngoc Tuan, 2026)^[15].

Overall, existing studies provide a substantial foundation for understanding bidding activities in Vietnam, particularly in terms of legal frameworks, operational challenges, and the initial impacts of digital transformation. However, the literature tends to address these issues in a fragmented manner, with limited attention to their interconnections within the specific context of construction bidding.

2. Research gaps and future research directions

Despite the growing body of literature, several important gaps remain. First, most studies examine bidding activities from either a legal-institutional perspective or an operational standpoint, without offering an integrated analysis that captures the interaction between regulatory frameworks, technological transformation, and sector-specific characteristics. In the case of construction bidding, such integration is particularly necessary due to the complexity and scale of construction projects.

Second, existing research on digital transformation in procurement largely focuses on the general benefits and challenges of e-procurement systems, with limited empirical analysis of how digitalization reshapes specific stages of the bidding process in construction projects. Issues such as bid evaluation, contractor selection criteria, and contract management under digital conditions remain insufficiently explored. Moreover, the causal mechanisms linking digital transformation to improvements in transparency and efficiency have not been systematically examined.

Third, while several studies identify factors affecting bidding performance, they often do not distinguish between structural causes (e.g., legal inconsistencies, institutional fragmentation) and operational causes (e.g., technical capacity, human resources). This lack of analytical differentiation limits the ability to propose targeted and effective solutions. In addition, there is a relative absence of comparative analysis across sectors or regions, which could provide deeper insights into variations in implementation and outcomes.

Fourth, research addressing governance risks in bidding tends to focus on specific cases or sectors, without developing a comprehensive framework for understanding integrity challenges in the context of digital procurement. The persistence of violations despite regulatory and technological improvements suggests the need for more nuanced approaches that consider organizational behavior, accountability mechanisms, and institutional incentives.

Based on these gaps, future research should adopt a more integrated and systematic approach to the study of construction bidding in the digital era. This includes combining legal analysis with empirical investigation of bidding practices, examining the interaction between digital technologies and institutional arrangements, and distinguishing between different categories of influencing factors. In addition, greater attention should be paid to the development of practical solutions that are grounded in both theoretical insights and real-world conditions.

Accordingly, the present study aims to address these limitations by providing a comprehensive analysis of construction bidding activities in Vietnam within the context of digital transformation. It focuses not only on identifying advantages and challenges but also on clarifying underlying causes and proposing feasible solutions, thereby contributing to a more coherent and policy-relevant understanding of procurement reform.

Research Methodology

This study adopts a qualitative research design, combining legal analysis, document analysis, and interpretive synthesis to examine construction bidding activities in Vietnam within the context of digital transformation. The methodological approach is selected to ensure a comprehensive understanding of both the institutional framework and practical implementation of bidding processes, particularly in relation to emerging digital practices.

First, the study employs a doctrinal legal analysis to systematically review the current regulatory framework governing bidding activities. Key legal documents, including the Law on Bidding (2013, 2023) ^[9, 11] and its subsequent amendments, as well as relevant decrees and circulars (e.g., Decree No. 214/2025/ND-CP; Circular No. 79/2025 ^[4, 7]/TT-BTC), are analyzed to identify changes in legal provisions, regulatory coherence, and the extent to which digital transformation has been institutionalized. This approach allows for the clarification of normative structures and the identification of inconsistencies or gaps in the legal system.

Second, document analysis is conducted on official reports, policy documents, and academic publications related to bidding activities. Sources such as the Ministry of Planning and Investment (2021) report on bidding implementation, as well as studies by Nguyen Thi Nhu Guyet (2022), Vu Hong Hai (2023), and Hoang Thanh Long (2026) ^[5, 11, 16], are examined to assess the current state of bidding practices, including operational performance, challenges, and influencing factors. In addition, media reports on bidding violations are incorporated to provide contextual evidence of governance issues and practical risks (News Department, 2021) ^[14]. This triangulation of sources enhances the reliability and depth of the analysis.

Third, the study applies a comparative and analytical approach to distinguish between different categories of factors affecting construction bidding. These include legal factors (e.g., regulatory clarity and consistency), institutional factors (e.g., coordination mechanisms and accountability structures), and technological factors (e.g., digital infrastructure and system interoperability). By categorizing and comparing these factors, the study seeks to uncover underlying causes of inefficiencies and limitations in bidding activities.

Furthermore, the research adopts an interpretive synthesis method to integrate findings from different sources and construct a coherent analytical framework. Rather than treating legal provisions, empirical observations, and policy developments as separate elements, the study examines their interactions within the broader context of digital governance. This approach enables the identification of both opportunities and constraints associated with the digital transformation of bidding processes.

Finally, the study acknowledges certain limitations. As it relies primarily on secondary data, the findings may not fully capture variations across local contexts or specific project types. However, the use of diverse and authoritative sources ensures that the analysis remains grounded in empirical evidence and policy realities. Overall, the chosen methodology provides a robust foundation for evaluating construction bidding activities and proposing feasible, context-sensitive solutions.

Research Results

Based on the analytical framework and the synthesis of legal documents, policy reports, and empirical studies, the

research results are structured into four interrelated contents: (i) advantages of construction bidding under digital transformation; (ii) existing challenges and limitations; (iii) underlying causes; and (iv) proposed solutions for improving effectiveness in the digital context.

1. Advantages of construction bidding in the context of digital transformation

The transition toward digital procurement has generated several tangible benefits for construction bidding activities in Vietnam. First, the implementation of the national e-procurement system has significantly enhanced transparency and accessibility of bidding information. Contractors are now able to access tender notices, bidding documents, and results through a centralized platform, which reduces information asymmetry and expands participation opportunities (Ministry of Planning and Investment, 2021). This increased openness contributes to a more competitive bidding environment and aligns with the principle of fairness embedded in the Law on Bidding (National Assembly, 2023) ^[11].

Second, digitalization has contributed to reducing administrative costs and procedural time. Online submission and evaluation of bids minimize the need for physical documentation and direct interaction, thereby streamlining procurement processes. This efficiency gain was particularly evident during the COVID-19 period, when digital platforms ensured the continuity of bidding activities despite restrictions on mobility (Tran Thi Ninh, 2021) ^[17].

Third, the application of digital tools enhances the traceability and auditability of procurement activities. Electronic records allow for easier monitoring and post-audit, which supports accountability and reduces opportunities for informal intervention. In this regard, digital transformation reinforces the role of bidding as an instrument for improving public spending efficiency (Vo Hoang Quan, 2014) ^[18].

Finally, recent regulatory developments have begun to standardize digital procedures, further strengthening these advantages. Instruments such as Circular No. 79/2025 ^[7]/TT-BTC provide clear guidance on information disclosure and electronic documentation, contributing to greater consistency in implementation (Ministry of Finance, 2025) ^[7].

2. Challenges and limitations in construction bidding

Despite notable progress, construction bidding in the digital context continues to face significant challenges. One of the most prominent issues is the inconsistency between legal provisions and practical implementation. Although the regulatory framework has been expanded and updated, overlapping rules and ambiguities persist, leading to difficulties in interpretation and application (Nguyen Thi Nhu Nguyet, 2022) ^[16].

Technical constraints also represent a major limitation. The adoption of e-procurement systems has not been uniform across regions and sectors, resulting in disparities in technological capacity among procuring entities and contractors. Issues related to system interoperability, data standardization, and platform reliability continue to affect the efficiency of online bidding (Dinh Hoa, 2018) ^[1].

In addition, governance risks remain a critical concern. Reports of bidding violations, particularly in sectors such as healthcare and education, indicate that digital systems alone are insufficient to eliminate manipulation and non-compliance (News Department, 2021) ^[14]. These cases

highlight weaknesses in supervision mechanisms and ethical enforcement.

From a sectoral perspective, construction projects pose specific challenges due to their complexity and scale. Inefficiencies in bid evaluation, unclear selection criteria, and limited coordination among stakeholders can lead to delays and cost overruns. Broader deficiencies in project management further exacerbate these issues (Kim Yen, 2024) ^[6].

3. Underlying causes of limitations in digital construction bidding

The identified challenges can be traced to several underlying causes, which can be grouped into legal, institutional, and technological dimensions.

From a legal perspective, the rapid evolution of regulatory frameworks has created inconsistencies and gaps. While new laws and amendments aim to modernize procurement, their implementation often lacks coherence, particularly in integrating digital procedures into existing legal structures (National Assembly, 2025) ^[13]. The absence of clear guidelines for certain aspects of e-procurement, such as dispute resolution and data validation, further complicates implementation.

Institutionally, limitations in organizational capacity and coordination play a significant role. Many procuring entities lack adequately trained personnel to manage digital bidding processes effectively. Studies indicate that professional competence and compliance with procedures are critical determinants of bidding performance (Vu Hong Hai, 2023) ^[11]. In addition, fragmented coordination among regulatory bodies reduces the effectiveness of oversight mechanisms.

Technologically, the transition to digital systems remains uneven. Infrastructure limitations, especially at the local level, hinder the full utilization of e-procurement platforms. Furthermore, the lack of standardized data systems and integration across platforms creates inefficiencies and increases the risk of errors.

Finally, behavioral and governance-related factors contribute to persistent challenges. As noted by Xuan Hoang, Dinh Loi, and Anh Dung (2022), issues such as procedural formalism, limited accountability, and opportunistic behavior continue to affect bidding outcomes. These factors indicate that institutional culture and incentive structures have not yet fully adapted to the requirements of digital governance.

4. Solutions to improve construction bidding in the digital era

Addressing the identified challenges requires a comprehensive set of solutions that simultaneously target legal, institutional, and technological dimensions.

First, it is necessary to enhance the coherence and clarity of the legal framework. Regulatory provisions should be systematically reviewed to eliminate overlaps and ensure consistency, particularly in relation to digital procedures. The integration of e-procurement regulations into the broader legal system must be accompanied by detailed guidelines to facilitate implementation (Government, 2025) ^[4].

Second, strengthening institutional capacity is essential. Training programs should be expanded to improve the professional competence of procurement personnel, with a focus on digital skills and compliance standards. At the same time, coordination mechanisms among regulatory

agencies need to be reinforced to ensure effective supervision and accountability.

Third, investment in technological infrastructure should be prioritized. Upgrading the national e-procurement system, improving interoperability, and standardizing data formats will enhance system efficiency and reliability. Ensuring equal access to digital platforms across regions is also critical to reducing disparities in participation.

Fourth, governance and transparency mechanisms must be strengthened. The use of digital tools should be complemented by robust monitoring systems and clear accountability frameworks. Lessons from recent reform initiatives, such as those implemented in Ho Chi Minh City, suggest that administrative innovation and proactive oversight can significantly improve bidding performance (Ngoc Tuan, 2026) ^[15].

Finally, a more integrated approach to construction project management is required. Improving the linkage between bidding processes and overall project governance will help address issues related to coordination, quality control, and cost management. This holistic perspective is essential for realizing the full benefits of digital transformation in construction bidding.

In summary, the research results indicate that while digital transformation has created significant opportunities for improving construction bidding in Vietnam, its effectiveness remains constrained by a combination of legal, institutional, and technological factors. Addressing these challenges requires coordinated reforms that align regulatory frameworks, organizational practices, and digital systems within a coherent governance model.

Discussion

Building on the findings, the discussion is structured around four core issues: (i) the transformative role of digitalization in construction bidding; (ii) the persistence of structural constraints; (iii) the interaction between legal frameworks and implementation practices; and (iv) implications for governance and policy reform.

1. Digital transformation as a structural shift in construction bidding

The results confirm that digital transformation is not merely a technical adjustment but a structural shift in the organization of bidding activities. The introduction of e-procurement systems has altered the way information is generated, accessed, and evaluated. This transformation enhances procedural transparency and broadens market participation, thereby reinforcing the competitive nature of bidding processes (Ministry of Planning and Investment, 2021).

However, the discussion must move beyond the assumption that digitalization inherently guarantees efficiency. While online bidding reduces direct interaction and administrative burden, its effectiveness depends on the extent to which digital tools are embedded within coherent institutional arrangements. As Dinh Hoa (2018) ^[1] suggests, the emergence of electronic transactions introduces new legal and operational complexities, requiring corresponding adjustments in regulatory frameworks. Therefore, digital transformation should be understood as a process that reshapes both technological and institutional dimensions of procurement.

2. Persistence of structural and operational constraints

Despite improvements associated with digitalization, the findings indicate that many longstanding issues in construction bidding remain unresolved. These include regulatory inconsistencies, procedural fragmentation, and disparities in implementation capacity. Such constraints reflect deeper structural conditions rather than isolated technical problems.

The persistence of these issues can be interpreted through the lens of institutional inertia. Legal reforms, although extensive, have not fully translated into consistent practices across sectors and regions (Nguyen Thi Nhu Nguyet, 2022) ^[16]. Moreover, the coexistence of traditional administrative routines with digital procedures creates hybrid systems that may reduce efficiency instead of enhancing it. Xuan Hoang, Dinh Loi, and Anh Dung (2022) highlight that unresolved shortcomings in policy execution and accountability continue to undermine the intended benefits of reform.

From a sectoral perspective, construction bidding amplifies these challenges due to its inherent complexity. The coordination required among multiple stakeholders—investors, contractors, consultants, and regulatory agencies, introduces additional layers of uncertainty. As a result, inefficiencies in bidding are often reproduced at later stages of project implementation, affecting overall project performance (Kim Yen, 2024) ^[6].

3. Legal frameworks and the limits of regulatory reform

The discussion also points to a critical tension between the expansion of legal frameworks and the effectiveness of their implementation. Vietnam has made significant progress in updating its procurement laws, particularly through the Law on Bidding 2023 ^[11] and subsequent amendments (National Assembly, 2023; National Assembly, 2025) ^[11, 13]. These reforms aim to integrate digital procedures, enhance transparency, and strengthen accountability.

However, the findings suggest that regulatory expansion alone is insufficient. The rapid introduction of new legal instruments has, in some cases, led to overlaps and inconsistencies, complicating the application of rules in practice. This is particularly evident in areas related to digital procurement, where legal provisions often lag behind technological developments or fail to address emerging issues such as data governance and electronic evidence (Dinh Hoa, 2018) ^[1].

Furthermore, the effectiveness of legal frameworks depends on enforcement capacity. Reports of bidding violations indicate that compliance mechanisms remain uneven, and that formal regulations do not always translate into substantive accountability (News Department, 2021) ^[14]. This gap between law and practice underscores the need for a more integrated approach that combines legal reform with institutional strengthening.

4. Governance implications and policy directions in the digital era

The interplay between digital transformation, institutional constraints, and legal frameworks has important implications for governance. First, the findings suggest that improving construction bidding requires a shift from rule-based management toward system-based governance. This involves integrating legal provisions, digital platforms, and organizational practices into a coherent framework that supports transparency and accountability.

Second, the role of institutional capacity emerges as a decisive factor. Studies indicate that professional competence, coordination mechanisms, and organizational learning significantly influence procurement outcomes (Vu Hong Hai, 2023; Hoang Thanh Long, 2026) ^[5]. In the context of digital transformation, these factors become even more critical, as the effective use of technology depends on human and organizational capabilities.

Third, the discussion highlights the importance of aligning digital tools with governance objectives. Digital platforms should not be viewed solely as instruments for procedural efficiency but as mechanisms for enhancing oversight, reducing discretion, and strengthening public trust. Recent policy initiatives, including Circular No. 79/2025/TT-BTC and Decree No. 214/2025 ^[4, 7]/ND-CP, reflect an effort to standardize digital processes and improve transparency (Ministry of Finance, 2025; Government, 2025) ^[7]. However, their effectiveness will depend on consistent implementation and continuous adaptation to evolving conditions.

Finally, local reform experiences provide valuable insights into practical approaches for improving bidding performance. Initiatives in Ho Chi Minh City demonstrate that administrative innovation, combined with digital solutions, can create measurable improvements in procurement efficiency (Ngoc Tuan, 2026) ^[15]. These experiences suggest that decentralized experimentation may play a constructive role in refining national-level policies.

In sum, the discussion indicates that the transformation of construction bidding in Vietnam is shaped by the interaction of technological change, institutional conditions, and legal frameworks. While digitalization creates new opportunities for improving efficiency and transparency, its impact remains contingent on broader governance reforms. Addressing persistent challenges requires a coordinated approach that aligns regulatory coherence, institutional capacity, and digital infrastructure within a unified system of public procurement management.

Conclusion

This study has examined construction bidding activities in Vietnam within the context of digital transformation, focusing on advantages, challenges, underlying causes, and policy implications. The findings indicate that digitalization has significantly improved transparency, accessibility, and procedural efficiency in bidding processes. The adoption of e-procurement systems has contributed to reducing administrative burdens, expanding market participation, and strengthening monitoring capacity, thereby reinforcing the role of bidding as an instrument for enhancing public investment efficiency. However, the results also reveal that these benefits remain constrained by persistent structural and institutional limitations. Inconsistencies in legal frameworks, uneven enforcement, and disparities in technological capacity continue to hinder the effective implementation of digital bidding. Moreover, governance risks, including non-compliance and procedural manipulation, suggest that digital tools alone cannot ensure integrity without corresponding improvements in accountability mechanisms.

The study highlights that the challenges of construction bidding are rooted in the interaction between legal, institutional, and technological factors. Addressing these challenges requires a coordinated approach that goes beyond regulatory reform to include capacity building, system integration, and the strengthening of governance practices.

In particular, aligning digital transformation with institutional development emerges as a critical condition for improving procurement outcomes. In conclusion, while digital transformation provides a strong foundation for modernizing construction bidding in Vietnam, its effectiveness depends on the extent to which it is embedded within a coherent and adaptive governance framework. Future reforms should therefore prioritize the integration of legal consistency, institutional capacity, and technological innovation to ensure sustainable improvements in procurement performance.

References

1. Dinh H. Online bidding and legal issues arising from practice. = Legal Electronic Magazine. <https://phaply.net.vn/dau-thau-qua-mang-va-nhung-van-de-phap-luat-phat-sinh-tu-thuc-te-a197070.html>, 2018.
2. Government. Decree No. 53/2014/ND-CP dated June 26, 2014, detailing the implementation of some articles of the Law on Bidding on contractor selection, 2014.
3. Government. Decree No. 98/2021/ND-CP dated November 8, 2021, on the management of medical equipment, 2021.
4. Government. Decree No. 214/2025/ND-CP dated August 4, 2025, detailing some articles and measures for implementing the Law on Bidding regarding contractor selection, 2025.
5. Hoang TL. Factors affecting the bidding and procurement of medical equipment by public non-business units. *Journal of State Management*. <https://www.quanlynhanuoc.vn/2026/03/25/cac-yeu-to-tac-dong-den-cong-tac-dau-thau-mua-sam-thiet-bi-y-te-cua-don-vi-su-nghiep-cong-lap/>, 2026.
6. Kim Y. Current situation and solutions to improve the efficiency of basic construction investment project management. *Environment and Society Magazine*. <https://moitruongvaxahoi.vn/thuc-trang-va-giai-phap-nang-cao-hieu-qua-quan-ly-du-an-dau-tu-xay-dung-co-ban-599.html>, 2024.
7. Ministry of Finance. Circular No. 79/2025/TT-BTC dated August 4, 2025, guiding the provision and posting of bidding information and bidding document templates on the national bidding network system, 2025.
8. Ministry of Planning and Investment. Report on the implementation of bidding activities in 2020, 2021.
9. National Assembly. Law on Bidding No. 43/2013/QH13 dated November 26, 2013.
10. National Assembly. Law on Management and Use of Public Assets 2017, 2017.
11. National Assembly. Law on Bidding, 2023.
12. National Assembly. Law No. 57/2024/QH15 dated November 29, 2024, on amending and supplementing some articles of the Law on Planning, the Law on Investment in the form of public-private partnerships, and the Law on Bidding, 2024.
13. National Assembly. Law No. 90/2025/QH15 dated June 25, 2025, on amending and supplementing a number of articles of the Law on Bidding, the Law on Investment in the form of public-private partnerships, the Customs Law, the Value Added Tax Law, the Law on Export and Import Taxes, the Investment Law, the Public Investment Law, and the Law on Management and Use of Public Assets, 2025.
14. News Department. A series of bidding violations have been prosecuted, many related to health and

- education. <https://vtv.vn/phap-luat/hang-loat-vu-an-sai-pham-ve-dau-thau-bi-khoi-to-nhieu-vu-lien-quan-den-y-te-giao-duc-20211116175332056.htm>, 2021.
15. Ngoc T. A series of solutions to create a shift in bidding in Ho Chi Minh City. Finance - Investment Newspaper. <https://baodauthau.vn/loat-giai-phap-tao-buoc-chuyen-trong-dau-thau-tai-tphcm-post196111.html>, 2026.
 16. Nguyen TNN. Current status of bidding in Vietnam and recommendations. Journal of Economics and Forecasting. <https://kinhtevadubao.vn/thuc-trang-cong-tac-dau-thau-o-viet-nam-hien-nay-va-khuyen-nghi-21227.html>, 2022.
 17. Tran TN. Enhancing the efficiency of public investment in the context of COVID-19. Journal of Economics and Forecasting, 2021, (20).
 18. Vo HQ. The role of bidding in public spending efficiency. Finance Magazine, 2014, (11).
 19. Vu HH. Improving the efficiency of bidding for investment projects at the Northern Power Corporation. Industry and Trade Magazine. <https://ojs.tapchicongthuong.vn/vi/ojs-post/nang-cao-hieu-qua-cong-tac-dau-thau-du-an-dau-tu-tai-tong-cong-ty-dien-luc-mien-bac-108879.htm>, 2023.
 20. Xuan H, Dinh L, Anh D. Shortcomings in the field of bidding that need to be addressed. Business Integration Electronic Magazine. <https://doanhnghiephoinhap.vn/nhung-bat-cap-trong-linh-vuc-dau-thau-can-thao-go-2057.html&link=1>, 2022.